**Supplementary Table 1. Morphological variations in adult bees developed from larvae after OTE and ME to captan and difenoconazole**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Fungicide** | **Age group and Exposure** | **Conc. (ppm)** | **Head** | **Abdomen** | **Forewing** | **Hindwing** | **Hind Leg** |
| **Length (mm)** | **Width (mm)** | **Length (mm)** | **Breadth (mm)** | **Length (mm)** | **Breadth (mm)** | **Length (mm)** | **Breadth (mm)** | **Length (mm)** |
| **Captan**  | **1-2 days old larvae (OTE)** | **UC** | 3.01a±0.06 | 3.51±0.06 | 6.36±0.62 | 4.08±0.09 | 8.61a±0.13 | 2.80±0.09 | 5.89a±0.24 | 1.67±0.08 | 10.87a±0.20 |
| **NC** | 2.98ab±0.06 | 3.44±0.05 | 6.03±0.22 | 3.95±0.15 | 8.56ab±0.13 | 2.73±0.13 | 5.84ab±0.11 | 1.60±0.13 | 10.84ab±0.16 |
| **0.08** | 3.00a±0.06 | 3.45±0.04 | 6.01±0.11 | 4.08±0.15 | 8.34bcd±0.11 | 2.75±0.05 | 5.70ab±0.12 | 1.56±0.12 | 10.69abc±0.18 |
| **0.4** | 2.98ab±0.07 | 3.42±0.07 | 6.21±0.48 | 3.97±0.10 | 8.42abc±0.16 | 2.77±0.07 | 5.80ab±0.10 | 1.66±0.14 | 10.76abc±0.14 |
| **2** | 2.95ab±0.08 | 3.46±0.06 | 5.90±0.22 | 4.04±0.14 | 8.51abc±0.25 | 2.70±0.13 | 5.78ab±0.15 | 1.58±0.14 | 10.62bc±0.11 |
| **10** | 3.00a±0.06 | 3.45±0.03 | 5.98±0.32 | 4.08±0.17 | 8.32cd±0.14 | 2.79±0.04 | 5.66ab±0.23 | 1.59±0.10 | 10.69abc±0.18 |
| **50** | 2.89b±0.10 | 3.43±0.07 | 5.89±0.27 | 3.89±0.22 | 8.18d±0.15 | 2.68±0.10 | 5.62b±0.10 | 1.55±0.11 | 10.54c±0.11 |
| **F-value** | **2.71\*** | **1.77** | **1.99** | **2.20** | **7.84\*** | **1.72** | **3.18\*** | **1.26** | **4.67\*** |
| **HSD** | **0.10** | **0.08** | **0.50** | **0.21** | **0.22** | **0.13** | **0.23** | **0.17** | **0.22** |
| **3-4 days old larvae (OTE)** | **UC** | 3.02±0.10 | 3.50±0.08 | 6.32±0.64 | 4.30±0.60 | 8.57a±0.10 | 2.80±0.06 | 5.88±0.21 | 1.94±0.85 | 10.88a±0.24 |
| **NC** | 3.01±0.04 | 3.50±0.07 | 6.07±0.38 | 4.09±0.25 | 8.56a±0.05 | 2.74±0.09 | 5.80±0.24 | 1.66±0.09 | 10.79a±0.27 |
| **0.08** | 2.99±0.06 | 3.48±0.07 | 6.16±1.14 | 4.11±0.07 | 8.36b±0.15 | 2.79±0.04 | 5.83±0.13 | 1.59±0.13 | 10.68ab±0.11 |
| **0.4** | 3.00±0.09 | 3.47±0.08 | 6.09±0.57 | 4.06±0.20 | 8.43ab±0.11 | 2.79±0.07 | 5.85±0.17 | 1.62±0.18 | 10.78a±0.14 |
| **2** | 2.97±0.07 | 3.48±0.05 | 6.26±0.83 | 4.09±0.21 | 8.35b±0.14 | 2.70±0.11 | 5.73±0.24 | 1.60±0.13 | 10.87a±0.14 |
| **10** | 3.01±0.12 | 3.49±0.18 | 5.91±0.43 | 4.12±0.11 | 8.44ab±0.13 | 2.78±0.05 | 5.80±0.19 | 1.65±0.12 | 10.69ab±0.12 |
| **50** | 2.93±0.16 | 3.45±0.06 | 5.76±0.36 | 3.99±0.28 | 8.24b±0.21 | 2.69±0.11 | 5.72±0.22 | 1.57±0.16 | 10.49b±0.27 |
| **F-value** | **0.75** | **0.21** | **0.74** | **0.92** | **6.81\*** | **2.78** | **0.77** | **1.18** | **4.26\*** |
| **HSD** | **0.14** | **0.13** | **0.93** | **0.41** | **0.18** | **0.11** | **0.28** | **0.48** | **0.27** |
| **5-6 days old larvae (OTE)** | **UC** | 3.07±0.09 | 3.50a±0.08 | 6.21±0.34 | 4.38±0.56 | 8.75a±0.10 | 2.88±0.05 | 5.98±0.20 | 1.77a±0.07 | 11.00a±0.14 |
| **NC** | 3.01±0.14 | 3.45ab±0.07 | 5.78±0.80 | 4.12±0.08 | 8.61ab±0.12 | 2.86±0.08 | 5.93±0.16 | 1.72ab±0.04 | 10.78abc±0.16 |
| **0.08** | 3.02±0.10 | 3.44ab±0.07 | 6.15±0.47 | 4.14±0.10 | 8.55abc±0.16 | 2.83±0.06 | 5.95±0.10 | 1.72ab±0.07 | 10.73abc±0.26 |
| **0.4** | 3.03±0.08 | 3.43ab±0.04 | 6.14±0.55 | 4.16±0.13 | 8.56abc±0.15 | 2.83±0.07 | 5.90±0.22 | 1.69ab±0.09 | 10.58bc±0.19 |
| **2** | 2.99±0.12 | 3.47ab±0.10 | 6.11±0.41 | 4.09±0.20 | 8.53bc±0.15 | 2.79±0.06 | 5.98±0.21 | 1.70ab±0.18 | 10.84ab±0.28 |
| **10** | 2.95±0.08 | 3.41ab±0.08 | 6.11±0.42 | 4.22±0.38 | 8.37c±0.16 | 2.79±0.09 | 5.80±0.27 | 1.65ab±0.09 | 10.75abc±0.24 |
| **50** | 2.94±0.13 | 3.39b±0.05 | 5.48±0.58 | 4.04±0.19 | 8.34c±0.19 | 2.75±0.31 | 5.80±0.13 | 1.58b±0.15 | 10.48c±0.16 |
| **F-value** | **1.41** | **2.25\*** | **2.30** | **1.32** | **7.26\*** | **0.93** | **1.43** | **2.59\*** | **5.66\*** |
| **HSD** | **0.15** | **0.10** | **0.73** | **0.39** | **0.21** | **0.19** | **0.27** | **0.15** | **0.29** |
| **1-2 days old larvae (ME)** | **UC** | 3.08±0.09 | 3.53a±0.04 | 6.70a±1.32 | 4.18a±0.05 | 8.61a±0.11 | 2.81a±0.03 | 6.10a±0.23 | 1.73a±0.05 | 10.97a±0.06 |
| **NC** | 3.01±0.05 | 3.52a±0.06 | 6.66a±0.64 | 4.09ab±0.09 | 8.60a±0.09 | 2.80a±0.04 | 5.98ab±0.31 | 1.67ab±0.07 | 10.73ab±0.29 |
| **0.08** | 2.98±0.06 | 3.44ab±0.06 | 6.11ab±0.27 | 4.17a±0.13 | 8.45abc±0.25 | 2.81a±0.05 | 5.90ab±0.11 | 1.68ab±0.08 | 10.70b±0.12 |
| **0.4** | 3.05±0.13 | 3.49ab±0.04 | 6.19ab±0.56 | 4.14a±0.05 | 8.45abc±0.21 | 2.81a±0.05 | 5.98ab±0.17 | 1.65ab±0.05 | 10.81ab±0.11 |
| **2** | 2.96±0.12 | 3.50ab±0.09 | 6.05ab±0.49 | 4.10ab±0.15 | 8.53ab±0.08 | 2.78a±0.05 | 5.69b±0.27 | 1.65ab±0.06 | 10.87ab±0.13 |
| **10** | 3.02±0.08 | 3.43b±0.07 | 5.97ab±0.27 | 4.09ab±0.11 | 8.32bc±0.17 | 2.63b±0.17 | 5.87ab±0.16 | 1.72a±0.11 | 10.68b±0.15 |
| **50** | 2.95±0.06 | 3.43b±0.07 | 5.69b±0.30 | 3.84b±0.39 | 8.21c±0.30 | 2.62b±0.11 | 5.66b±0.23 | 1.58b±0.12 | 10.13c±0.21 |
| **F-value** | **2.24** | **4.26\*** | **2.82\*** | **3.65\*** | **4.98\*** | **8.40\*** | **4.40\*** | **2.93\*** | **22.02\*** |
| **HSD** | **0.13** | **0.08** | **0.90** | **0.24** | **0.26** | **0.12** | **0.31** | **0.11** | **0.24** |
| **3-4 days old larvae (ME)** | **UC** | 3.03±0.03 | 3.49±0.07 | 6.27a±0.30 | 4.13±0.18 | 8.68a±0.17 | 2.84±0.07 | 5.95a±0.21 | 1.73±0.09 | 10.89a±0.19 |
| **NC** | 2.93±0.09 | 3.47±0.08 | 6.13a±0.30 | 4.06±0.13 | 8.50ab±0.11 | 2.77±0.09 | 5.90ab±0.12 | 1.67±0.03 | 10.79a±0.35 |
| **0.08** | 2.97±0.08 | 3.43±0.06 | 5.79ab±0.30 | 4.09±0.07 | 8.53ab±0.12 | 2.80±0.10 | 5.83ab±0.18 | 1.73±0.06 | 10.76ab±0.30 |
| **0.4** | 2.99±0.11 | 3.44±0.08 | 6.17a±0.47 | 4.00±0.22 | 8.32bc±0.22 | 2.79±0.09 | 5.89ab±0.21 | 1.69±0.10 | 10.82a±0.26 |
| **2** | 2.97±0.07 | 3.44±0.07 | 5.79ab±0.76 | 4.02±0.12 | 8.39abc±0.21 | 2.82±0.14 | 5.87ab±0.17 | 1.72±0.05 | 10.74ab±0.22 |
| **10** | 2.99±0.09 | 3.45±0.06 | 5.66ab±0.55 | 4.03±0.09 | 8.33bc±0.19 | 2.77±0.07 | 5.90ab±0.10 | 1.68±0.06 | 10.63ab±0.25 |
| **50** | 2.93±0.09 | 3.42±0.06 | 5.43b±0.29 | 3.91±0.23 | 8.14c±0.32 | 2.76±0.07 | 5.65b±0.26 | 1.65±0.10 | 10.37b±0.29 |
| **F-value** | **1.53** | **0.95** | **3.99\*** | **1.65** | **6.46\*** | **0.76** | **2.43\*** | **1.47** | **3.47\*** |
| **HSD** | **0.12** | **0.09** | **0.63** | **0.22** | **0.28** | **0.13** | **0.26** | **0.11** | **0.38** |
| **Difenoconazole**  | **1-2 days old larvae (OTE)** | **UC** | 3.10±0.06 | 3.55±0.06 | 6.29a±0.32 | 4.24a±0.07 | 8.79a±0.07 | 2.87a±0.07 | 6.08±0.12 | 1.77a±0.04 | 10.96±0.11 |
| **NC** | 3.10±0.10 | 3.54±0.06 | 6.05ab±0.38 | 4.10ab±0.15 | 8.66a±0.22 | 2.83a±0.09 | 5.95±0.25 | 1.74ab±0.06 | 10.88±0.23 |
| **0.08** | 3.03±0.10 | 3.45±0.11 | 5.81b±0.25 | 4.12ab±0.07 | 8.70a±0.16 | 2.82a±0.05 | 5.96±0.26 | 1.72ab±0.05 | 10.78±0.15 |
| **0.4** | 3.02±0.10 | 3.47±0.14 | 5.89ab±0.25 | 4.16a±0.11 | 8.64a±0.35 | 2.85a±0.11 | 6.05±0.11 | 1.71ab±0.07 | 10.83±0.34 |
| **2** | 3.03±0.08 | 3.49±0.06 | 5.86ab±0.30 | 4.20a±0.12 | 8.57ab±0.29 | 2.81a±0.08 | 6.04±0.12 | 1.74ab±0.04 | 10.95±0.24 |
| **10** | 3.04±0.09 | 3.49±0.06 | 6.10ab±0.37 | 4.13ab±0.07 | 8.59ab±0.18 | 2.81a±0.05 | 5.97±0.17 | 1.71ab±0.05 | 10.92±0.10 |
| **50** | 2.99±0.10 | 3.44±0.09 | 5.72b±0.24 | 4.00b±0.14 | 8.26b±0.28 | 2.67b±0.11 | 5.84±0.11 | 1.68b±0.06 | 10.74±0.15 |
| **F-value** | **1.68** | **1.85** | **3.62\*** | **4.43\*** | **4.22\*** | **4.75\*** | **1.78** | **2.18\*** | **1.50** |
| **HSD** | **0.13** | **0.12** | **0.43** | **0.15** | **0.33** | **0.12** | **0.24** | **0.07** | **0.28** |
| **3-4 days old larvae (OTE)** | **UC** | 3.02±0.14 | 3.50±0.09 | 6.39±0.79 | 4.18±0.17 | 8.63a±0.15 | 2.83±0.08 | 6.00±0.25 | 1.73±0.07 | 10.94±0.45 |
| **NC** | 3.02±0.12 | 3.50±0.11 | 5.96±1.20 | 4.09±0.27 | 8.46ab±0.19 | 2.82±0.11 | 5.93±0.27 | 1.70±0.08 | 10.92±0.39 |
| **0.08** | 3.02±0.07 | 3.43±0.09 | 5.79±0.65 | 3.98±0.12 | 8.40ab±0.20 | 2.77±0.11 | 5.93±0.26 | 1.66±0.09 | 10.70±0.26 |
| **0.4** | 3.00±0.16 | 3.50±0.11 | 6.26±0.76 | 4.13±0.18 | 8.47ab±0.32 | 2.78±0.15 | 5.90±0.19 | 1.70±0.07 | 10.73±0.43 |
| **2** | 3.00±0.15 | 3.47±0.08 | 6.27±0.62 | 4.14±0.21 | 8.36ab±0.24 | 2.81±0.12 | 5.83±0.20 | 1.63±0.13 | 10.78±0.48 |
| **10** | 2.97±0.13 | 3.48±0.04 | 6.07±0.50 | 4.10±0.08 | 8.34ab±0.19 | 2.78±0.07 | 5.94±0.14 | 1.73±0.11 | 10.68±0.34 |
| **50** | 2.92±0.16 | 3.45±0.11 | 5.73±0.58 | 3.69±0.85 | 8.18b±0.18 | 2.73±0.11 | 5.83±0.11 | 1.62±0.09 | 10.67±0.39 |
| **F-value** | **0.61** | **0.74** | **0.99** | **1.91** | **3.47\*** | **0.72** | **0.75** | **1.74** | **0.69** |
| **HSD** | **0.19** | **0.13** | **1.05** | **0.50** | **0.30** | **0.16** | **0.29** | **0.13** | **0.55** |
| **5-6 days old larvae (OTE)** | **UC** | 3.06±0.07 | 3.52±0.11 | 6.31±0.42 | 4.14±0.68 | 8.60a±0.21 | 2.87±0.08 | 5.89±0.14 | 1.71±0.05 | 10.92±0.36 |
| **NC** | 2.98±0.11 | 3.51±0.15 | 6.13±0.57 | 3.96±0.27 | 8.37ab±0.33 | 2.81±0.14 | 5.70±0.29 | 1.64±0.13 | 10.67±0.46 |
| **0.08** | 2.99±0.16 | 3.48±0.11 | 6.25±0.62 | 4.04±0.28 | 8.35ab±0.34 | 2.83±0.09 | 5.80±0.22 | 1.67±0.14 | 10.77±0.59 |
| **0.4** | 2.90±0.09 | 3.46±0.07 | 6.14±0.55 | 4.05±0.25 | 8.38ab±0.30 | 2.82±0.10 | 5.88±0.23 | 1.66±0.10 | 10.71±0.51 |
| **2** | 2.96±0.12 | 3.49±0.07 | 6.18±0.41 | 4.05±0.19 | 8.34ab±0.13 | 2.84±0.08 | 5.78±0.12 | 1.64±0.11 | 10.77±0.29 |
| **10** | 2.97±0.09 | 3.48±0.10 | 6.04±0.48 | 4.03±0.17 | 8.27ab±0.32 | 2.79±0.10 | 5.72±0.23 | 1.67±0.08 | 10.52±0.59 |
| **50** | 2.95±0.15 | 3.45±0.11 | 5.62±0.68 | 3.95±0.18 | 8.03b±0.33 | 2.75±0.10 | 5.66±0.27 | 1.59±0.13 | 10.41±0.36 |
| **F-value** | **1.44** | **0.37** | **1.56** | **0.32** | **2.91\*** | **1.18** | **1.38** | **0.90** | **1.17** |
| **HSD** | **0.17** | **0.15** | **0.74** | **0.46** | **0.40** | **0.14** | **0.31** | **0.15** | **0.65** |
| **1-2 days old larvae (ME)** | **UC** | 3.03±0.07 | 3.50a±0.02 | 6.11±0.50 | 4.14a±0.08 | 8.58a±0.20 | 2.86a±0.04 | 5.95a±0.19 | 1.69±0.07 | 10.90a±0.21 |
| **NC** | 2.99±0.12 | 3.50a±0.06 | 6.04±0.66 | 4.13a±0.09 | 8.51a±0.16 | 2.79a±0.07 | 5.77ab±0.15 | 1.66±0.06 | 10.60a±0.14 |
| **0.08** | 2.99±0.09 | 3.46ab±0.07 | 5.64±0.46 | 3.98ab±0.16 | 8.37ab±0.14 | 2.82a±0.04 | 5.78ab±0.18 | 1.66±0.10 | 10.72a±0.25 |
| **0.4** | 2.97±0.06 | 3.45ab±0.03 | 6.03±0.47 | 4.04ab±0.15 | 8.33ab±0.05 | 2.79ab±0.06 | 5.77ab±.026 | 1.68±0.07 | 10.55ab±0.19 |
| **2** | 2.99±0.16 | 3.50a±0.09 | 6.07±0.34 | 4.08ab±0.13 | 8.36ab±0.13 | 2.82a±0.06 | 5.84ab±0.13 | 1.68±0.09 | 10.68a±0.20 |
| **10** | 2.96±0.12 | 3.47ab±0.10 | 5.93±0.42 | 4.02ab±0.13 | 8.21bc±0.11 | 2.81a±0.06 | 5.77ab±0.20 | 1.68±0.03 | 10.59a±0.12 |
| **50** | 2.90±0.12 | 3.38b±0.11 | 5.58±0.53 | 3.89b±0.18 | 7.96c±0.38 | 2.68b±0.12 | 5.62b±0.18 | 1.61±0.06 | 10.11b±0.65 |
| **F-value** | **1.08** | **2.40\*** | **1.68** | **3.55\*** | **9.62\*** | **5.15\*** | **2.44\*** | **1.03** | **5.71\*** |
| **HSD** | **0.15** | **0.10** | **0.68** | **0.19** | **0.27** | **0.10** | **0.26** | **0.10** | **0.42** |
| **3-4 days old larvae (ME)** | **UC** | 3.04±0.07 | 3.51a±0.08 | 6.41a±0.49 | 4.18a±0.20 | 8.60a±0.16 | 2.85a±0.04 | 6.00a±0.23 | 1.74±0.07 | 10.90a±0.18 |
| **NC** | 3.03±0.10 | 3.49a±0.14 | 6.09ab±0.47 | 4.11ab±0.11 | 8.50ab±0.25 | 2.85a±0.10 | 5.89ab±0.25 | 1.72±0.05 | 10.78a±0.26 |
| **0.08** | 2.95±0.22 | 3.46ab±0.09 | 6.22ab±0.36 | 4.06ab±0.09 | 8.40abc±0.18 | 2.85a±0.08 | 5.86ab±0.13 | 1.68±0.05 | 10.69ab±0.33 |
| **0.4** | 2.92±0.18 | 3.47ab±0.04 | 6.32ab±0.63 | 4.02ab±0.25 | 8.46ab±0.16 | 2.84ab±0.06 | 5.92ab±0.23 | 1.73±0.05 | 10.61ab±0.32 |
| **2** | 2.99±0.11 | 3.48ab±0.03 | 5.97ab±0.44 | 4.09ab±0.16 | 8.44ab±0.07 | 2.84ab±0.04 | 5.88ab±0.10 | 1.71±0.05 | 10.69ab±0.25 |
| **10** | 2.95±0.10 | 3.43ab±0.05 | 5.75ab±0.51 | 3.98ab±0.12 | 8.26bc±0.28 | 2.77ab±0.08 | 5.77ab±0.27 | 1.69±0.05 | 10.47ab±0.31 |
| **50** | 2.92±0.08 | 3.36b±0.07 | 5.65b±0.35 | 3.87b±0.17 | 8.12c±0.13 | 2.69b±0.23 | 5.62b±0.23 | 1.67±0.08 | 10.34b±0.39 |
| **F-value** | **1.20** | **2.92\*** | **3.18\*** | **2.92\*** | **6.09\*** | **2.74\*** | **2.81\*** | **1.56** | **3.56\*** |
| **HSD** | **0.19** | **0.11** | **0.66** | **0.23** | **0.26** | **0.15** | **0.30** | **0.08** | **0.41** |

UC-Untreated control, NC-Negative control, OTE-One-time exposure, ME- Multiple exposures

All values are given as Mean±SD

The different small letters (a, b …) within a column are significantly different by Tukey’s HSD (P<0.05)